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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,554	12/22/2003	Demetrios James Tsillas	E2003-701010	5061

37462 7590 10/28/2009

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EXAMINER	
NOORISTANY, SULAIMAN	
ART UNIT	PAPER NUMBER
2446	

NOTIFICATION DATE	DELIVERY MODE
10/28/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/743,554	TSILLAS, DEMETRIOS JAMES	
	Examiner	Art Unit	
	SULAIMAN NOORISTANY	2446	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

This Office Action is response to the application (10743554) filed on 07/16/2009.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a), which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7, 9-11, 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mahajan** US patent No. **US 6,628,624** in view of **Perlman (**NPL **-- Interconnections: Bridges and Routers")**

Regarding claim 1, Mahajan teaches wherein a method for determining a spanning tree, the method comprising acts of:

determining a root bridge identifier, the root bridge identifier being used as a root bridge identifier in a plurality of network forwarding devices, at least two of which are coupled by a network and participate in a same spanning tree **(Fig. 1, 7A-7B -- the enhanced spanning tree entity 316 examines at least the contents of the root identifier field 112,... and the bridge ID field 116 – col. 13, lines 40-57)**.

However, Mahajan is silent in terms "*using, by the at least two of the plurality of network forwarding devices, the root bridge identifier without having to exchange the root bridge identifier in a network message.*"

Perlman teaches that it is well known to have system wherein "using, by the at least two of the plurality of network forwarding devices, the root bridge identifier without having to exchange the root bridge identifier in a network message" **(Fig. 4.13 – The SR-TB bridge can receive three types of packets: 1. specifically routed, 2. Spanning tree explorer, 3. All path explorer …removing the source routing header when forwarding to ports into the TB of the network – page 3)** in order to make the system more efficient and less costly.

It would have been obvious to one ordinary skill in the art to modify Mahajan's invention by utilizing a method for forwarding all packets into the spanning tree network which are either specifically routed or spanning tree explorer. If the SR-TB bridge receives a specifically routed packet whose LAN number indicates that it should be forwarded onto the TB side, the SR-TB bridge forwards the packet, first removing the source routing header. If the SR-TB bridge receives a spanning tree explorer packet, it removes the source routing header when forwarding to ports into the TB portions of the network, as taught by Perlman.

Regarding claim 2, Mahajan and Perlman together taught the method as in claim 1 above. Mahajan further teaches wherein the act of determining the root bridge identifier includes an act of configuring, at the at least two of the network forwarding devices, the root bridge identifier as being the root bridge in the spanning tree **(Fig. 1 -- block diagram of a conventional configuration bridge protocol data unit (BPDU) message)**.

Regarding claim 3, Mahajan and Perlman together taught the method as in claim 1 above. Mahajan further teaches wherein at the at least two of the network forwarding devices, a same root bridge path cost **(Fig. 1 -- block diagram of a conventional configuration bridge protocol data unit (BPDU) message)**.

Regarding claim 4, Mahajan and Perlman together taught the method as in claim 1 above. Mahajan further teaches wherein the act of determining a root bridge identifier further comprises an act of configuring, in a respective memory of the at least two of the plurality of network forwarding devices, an entry for the root bridge identifier **(Fig. 3, unit 326 – spanning tree memory)**.

Regarding claim 5, Mahajan and Perlman together taught the method as in claim 1 above. Mahajan further teaches wherein, for at least one respective access port of the at least two of the plurality of network forwarding devices, a root path cost **(Fig. 1, unit 114 -- block diagram of a conventional configuration bridge protocol data unit (BPDU) message)**.

Regarding claim 6, Mahajan and Perlman together taught the method as in claim 1 above. Mahajan further teaches wherein the root path costs for the at least one respective access port of the at least two of the plurality of network forwarding devices are the same value **(Fig. -4-7, flow diagrams of the preferred methods of the present invention)**.

Regarding claim 7, Mahajan and Perlman together taught the method as in claim 1 above. Mahajan further teaches wherein the network includes a bridged network that

couples the at least two network forwarding devices, and wherein the method further comprises an act of disabling, on at least one port of the at least two network forwarding devices coupled to the network, transmission of bridge protocol data units (BPDUs) between the at least two network forwarding devices **(disabling state – col. 2, lines 13-40)**.

Regarding claim 9, Mahajan and Perlman together taught the method as in claim 1 above. Mahajan further teaches wherein, on at least one respective access port of the at least two of the plurality of network forwarding devices, bridge protocol data units (BPDUs) **(Fig. 1-3 -- block diagram of a conventional configuration bridge protocol data unit (BPDU) message)**.

Regarding claim 10, Mahajan and Perlman together taught the method as in claim 1 above. Mahajan further teaches wherein the at least two of the plurality of network forwarding devices are coupled by another network, and the method further comprises communicating the root bridge identifier in at least one BPDU transmitted on the another network **(Fig. 1-3 -- block diagram of a conventional configuration bridge protocol data unit (BPDU) message)**.

Regarding claim 11, Mahajan and Perlman together taught the method as in claim 1 above. Mahajan further teaches wherein the network includes a bridged network that couples the at least two network forwarding devices, and wherein the method further comprises an act of disabling, on at least one logical connection of the at least two network forwarding devices coupled to the network, transmission of bridge protocol data

units (BPDUs) between the at least two network forwarding devices **(disabling state – col. 2, lines 13-40).**

Regarding claim 13, Mahajan and Perlman together taught the method as in claim 1 above. Mahajan further teaches wherein on at least one respective access port of the at least two of the plurality of network forwarding devices, bridge protocol data units (BPDUs) **(Fig. 1-3 -- block diagram of a conventional configuration bridge protocol data unit (BPDU) message)**.

Regarding claim 14, Mahajan and Perlman together taught the method as in claim 1 above. Mahajan further teaches wherein the at least two of the plurality of network forwarding devices are coupled by another network, and the method further comprises communicating the root bridge identifier in at least one BPDU transmitted on the another network **(Fig. 1-3 -- block diagram of a conventional configuration bridge protocol data unit (BPDU) message)**.

Regarding claim 15, Mahajan and Perlman together taught the method as in claim 1 above. Mahajan further teaches wherein the at least two of the plurality of network forwarding devices are located at the edge of a provider network, and wherein the further comprises an act of disabling, on at least one respective port of the at least two network forwarding devices, each of the at least one respective ports being coupled to the provider network, transmission of bridge protocol data units (BPDUs) between the at least two network forwarding devices **(Fig. 1-3 -- block diagram of a conventional**

configuration bridge protocol data unit (BPDU) message; disabling state – col. 2, lines 13-40).

Regarding claim 16, Mahajan and Perlman together taught the method as in claim 1 above. Perlman further teaches wherein the root bridge identifier is not assigned to any network forwarding device in the spanning tree **(Page. 3 – removing the source header when forwarding to the port….)**.

Claims 8 & 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mahajan** US patent No. **US 6,628,624** in view of **Perlman** (NPL – "**Interconnections: Bridges and Routers**") further in view of **Lee** Us Patent No. **US 6,879,594.**

Regarding claims 8 & 12, Mahajan and Perlman together taught the method as in claim 1 above. However, Mahajan and Perlman are silent in terms of *using Multiprotocol Label Switching (MPLS)*.

Lee teaches that it is well known to implement using Multiprotocol Label Switching (MPLS) **(MPLS – col. 4, lines 65-67)**.

It would have been obvious to one ordinary skill in the art to modify Mahajan's invention by utilizing MPLS system in spanning tree which present a mechanism, based on "threads", that can be used to prevent MPLS from setting up label switched paths that contain loops. When a label switched router (LSR) finds that the next hop for a particular FEC has changed, it creates a thread and extends it downstream. Each such

thread is assigned a unique "color", such that no two threads in the network can have the same color. For a given label switched path, once a thread is extended to a particular next hop, no other thread is extended to that next hop, unless there is a change in the hop count from the furthest upstream node, therefore, desirable to provide method and system for preventing the creation of looping label switched paths in a MPLS environment that is reliable and requires a low router overhead, as taught by Lee.

Response to Arguments

Applicant's arguments filed on 07/16/2009 have been fully considered but they are not persuasive.

Applicant Argument:

The proposed combination fails to disclose the act of "using, by the at least two of the plurality of network forwarding devices, the root bridge identifier without having to exchange the root bridge identifier in a network message" as required by claim 1.

Examiner Response:

With respect to applicant arguments, it is the claims that define the claimed invention, and it is claims, not specifications that are anticipated or unpatentable. *Constant v. Advanced Micro-Devices Inc.*, 7 USPQ2d 1064. **Mahajan** discloses in Fig. 7A-7B, if the examined contents from the received BPDU message 100 are different from the stored BPDU information (e.g., different assumed root or root path cost), the

enhanced spanning tree entity 316 "knows" that re-calculating the root, root path cost and root port may result in a change of port states. Accordingly, the enhanced spanning tree entity 316 preferably proceeds first to determine whether the contents of the received BPDU message 100 are "better" than the BPDU information stored for the respective port 310 on which the subject BPDU message was received (e.g., received BPDU message has lower root or root path cost), as indicated at block 718. If not, entity 316 next determines whether the respective port 310 is the current root port for the switch 222, as shown at block 720. If this BPDU message, which does not contain information that is "better" than that currently stored for the respective port 310, was nonetheless received on the root port, then the enhanced spanning tree entity 316 "knows" that it may need to identify a new root port. Accordingly, entity 316 processes the contents of the received BPDU message and re-calculates the root, root path cost and root port in accordance with the conventional spanning tree protocol, as shown at block 722. Following step 722, this portion of the process 700 is complete, as indicated at block 724.

Perlman further discloses in Fig 4, the SR-TB bridge can receive three types of packets:

1. Specifically routed.

2. Spanning tree explorer.

3. All paths explorer.

The first two cases are fairly straightforward. If the SR-TB bridge receives a specifically

muted packet whose LAN number indicates that it should be forwarded onto the TB side, the SR-TB bridge forwards the packet, first removing the source routing header. If the SR-TB bridge receives a spanning tree explorer packet, it removes the source routing header when forwarding to ports into the TB portions of the network "here is same as ***the root bridge identifier without having to exchange the root bridge identifier in a network message*** (as Mahajan discloses in Fig. 1, "Appended to header 102 is a BPDU message area 110 that also contains a number of fields, including a root identifier (ROOT ID) field 112, a root path cost field 114, a bridge identifier (BRIDGE ID) field 116, a port identifier (PORT ID) field 118". Therefore, Perlman further discloses a technique wherein "it removes the source routing header when forwarding to ports into the TB portions of the network" "***header***" here is same as "***the root bridge identifier***"). The third case is more difficult. If the SR-TB bridge receives an all paths explorer packet, and the launcher of the packet is expecting replies from the packet's target, the SR-TB bridge must respond on behalf of the target station. If the SR-TB bridge has learned that the target exists on the TB port, it can respond by adding the LAN number of the TB port and replying with a specifically routed packet along the reverse path. If the SR-TB bridge has not learned the location of the target station, it could forward the all paths explorer packet, minus the source routing header, into the TB portion of the network and hope that the target station will transmit something in response. This would allow the SR-TB bridge to acquire a cache entry for the target, thereby enabling it to respond to a subsequent all paths explorer packet if one should arrive shortly. Therefore, examiner maintains the rejection.

Conclusion

Applicant's argument filed on 07/16/2009, have been fully considered but they are not persuasive. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sulaiman Nooristany whose telephone number is (571) 270-1929. The examiner can normally be reached on M-F from 9 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu, can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see

http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sulaiman Nooristany 10/22/2009

/Jeffrey Pwu/

Supervisory Patent Examiner, Art Unit 2446